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Diatom complexes in the bottom sediments of rubskoe lake (The east european plain, Russia)

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Abstract

© SGEM2018. The study of lake sediments allows to reconstruct abiotic and biotic conditions of a lake and its surrounding area. Diatom communities are commonly used in studies of water quality and being bioindicators of the lake state diatoms used for the reconstruction ecological conditions of the past. Core samples from Rubskoe Lake were collected in July 2015 and the species composition of the diatom algae, which serve as, were studied. The core covered a 13 000 years period. In 23 samples of Rubskoe Lake 30 diatom taxa belonging to 15 genera were identified. The predominance of holarctic acidophilic benthic species with the growth under the moderate temperatures is noted. Analysis of the sediment core revealed the changing stages of the lake evolution: mass development of the diatoms and degradation of them due to environmental and climatic changes. Diatoms were absolutely absent or presented in small quantities in lower layers (260-500 cm). The highest taxonomic diversity and the maximum rate of benthic species were noted at the depth of 120 cm that indicates the high water transparency and low water level. The species inhabiting the lake at the present stage of the study were found up to the depth of 240 cm layer, including the predominant Aulacoseira granulata (Ehrenberg) Simonsem, Pinnularia breweriana N.Foged. On the same horizons the high rate of oligohalobes-indifferent taxa, which prefer moderate temperature conditions, and species developing in acidic environmental conditions were noted, that could indicate the presence of peat bogs in the study area.

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Keywords

Bottom sediments, Climate, Diatom algae, Rubskoe Lake

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